SYNTEX RESEARCH
DIVISION OF SYNTEX (U.S.A.) INC.
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JDB

Site: Syntex-Verona
ID #: MOD007452164
Break: 17.8
Other: Spring River Reports 12/7/86

LEWIS J. THROOP, Ph.D., VICE PRESIDENT AND DIRECTOR
ANALYTICAL AND ENVIRONMENTAL RESEARCH

0751

AER: 8011
December 17, 1986

Mr. Robert Morby
Chief, Waste Management Branch
Air and Waste Management Division
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Dear Mr. Morby:

Enclosed is the annual report of analyses of fish and sediment samples taken from the Spring River in 1986. This report is being provided in compliance with the Verona Plant Fish and Sediment Plan, as approved by the U.S. Environmental Protection Agency on March 24, 1984 (Docket No. 83-H-008).

The origins of the fish samples are documented in a letter dated September 18, 1986 from Mr. Ron Crunkilton of the Missouri Department of Conservation to Ms. Kathy Barrett of the U.S.E.P.A. A previous letter to you on November 11, 1986 from Dr. Throop stated our intention to analyze the fish samples at Syntex Research. The report of the analyses by Mr. Robert Brunck is attached. Table I of this report is the summary of analytical results. The required deliverables are attached along with Mr. Brunck's report. As in previous years we have calculated the equivalent of a whole fish analysis for fish in Group B at each site using the laboratory analyses for fillets and remainders and the weights of fillets and whole fish supplied by Mr. Crunkilton. The calculated equivalent levels of TCDD in whole fish are summarized in the attached Table II.

The sediment samples were taken in the field by Bill Durbin representing Syntex Agribusiness and Karen Koth of the U.S.E.P.A on August 26, 1986. The samples were analyzed by Syntex Research. No 2,3,7,8-TCDD was detected in the samples. The analytical results were reported by A. Abubakari to L. Throop on

September 11, 1986. A copy of this report (AER #7731) is attached.

Please do not hesitate to telephone me if you have any questions concerning these results or if I can provide you with any additional information.

Yours sincerely,

David Robertson

David Robertson, Ph.D.
Department Head
Environmental Analysis and
Process Control

DR:jg

xc: K. Stormer (w/attach.)
[redacted]

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TABLE II

Calculated 2,3,7,8-TCDD Levels in Whole Fish
Based on Analyses of Fillets and Remainders from Group B

Site	Calc. TCDD in Whole Fish ppt	Reference Number	Weight of Fillets (1)	TCDD in Fillets ppt (2)	Weight of Whole Fish (3)	TCDD in Remainder ppt (2)
1	8.5	AKJC4020	159 g	2.5	931	9.7
2	16.9	AKJC4021	290 g	4.4	2137	18.9
3	6.2	AKJC4022	175 g	1.3	1181	7.1
4	6.9	AKJC4023	104 g	1.7	791	7.7
5	1.8	AKJC4024	260 g	1.2	1699	1.9

$$\text{Calculated TCDD} = \frac{[\text{wt. of fillets X TCDD in fillets}]+[(\text{wt. of whole fillets})\text{X TCDD in remainder}]}{\text{WT. OF WHOLE FISH}}$$

(1) Data provided by Mr. Crunkilton, September 18, 1986
(2) Data provided by Mr. Brunck, December 4, 1986
(3) The total weight of whole fish was obtained by adding the individual weights provided by Mr. Cruikilton.

Calculations by David Robertson, December 12, 1986

M E M O R A N D U M

MEMO TO: L. Throop (w/attach)
D. Robertson

DATE: December 4, 1986
AER# 7980

FROM: B. Brunck

COPIES TO: D. Dei Rossi
T. Wasierski
L. Tokes (w/attach)

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SUBJECT: 2,3,7,8-TCDD Determinations in Spring River Fish for 1986

Spring River fish samples for 1986 were received on October 15, 1986 from Dr. Michael Gross of the Midwest Center for Mass Spectrometry, Department of Chemistry, University of Nebraska-Lincoln. Samples consisted of 100g aliquots of fish homogenate packaged in plastic bags. All were frozen and in good condition upon receipt. The white sucker fish samples were collected by the Missouri Department of Conservation (MDC) on August 25 and 26, 1986 at the same locations as in 1985 and 1984. Homogenates of fillets, remainders, and whole fish were prepared by MDC and 100g aliquots were released for analysis.

Analyses were completed for 2,3,7,8-TCDD using Syntex Method AR #10,349 'Determination of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD) in Fish by Capillary Gas Chromatography High Resolution Mass Spectrometry Selected Ion Monitoring (C-GC/HRMS-SIM).' A summary of results is listed in Table I.

Attachments: 1) Table I (Summary of Results)
2) Chain of Custody and Sampling Records
3) Documentation for TCDD Standards
4) GC/MS Data and Computer Reports

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Table I

2,3,7,8-TCDD in Fish from the Spring River, 1986
(parts per trillion - ppt)

Sample .I.D.	Site-Group	Type	Syntex Log No.	Results TCDD (ppt)	320/322 Isotope Ratio
AKJC4-004	1-A	Fillet	86ENV276	2.8	0.80
AKJC4-005	1-B	Fillet	86ENV277	2.5	0.79
AKJC4-006	1-B	Remainder	86ENV278	9.6/9.8	0.80/0.83
AKJC4-007	1-C	Whole	86ENV279	13.2	0.77
AKJC4-008	2-A	Fillet	86ENV280	2.3	0.79
AKJC4-009	2-B	Fillet	86ENV281	4.4	0.86
AKJC4-010	2-B	Remainder	86ENV282	18.9	0.84
AKJC4-011	3-A	Fillet	86ENV283	1.2	0.82
AKJC4-012	3-B	Fillet	86ENV284	1.3	0.85
AKJC4-013	3-B	Remainder	86ENV285	7.1	0.73
AKJC4-014	4-A	Fillet	86ENV286	1.1	0.81
AKJC4-015	4-B	Fillet	86ENV287	1.7	0.86
AKJC4-016	4-B	Remainder	86ENV288	7.7	0.77
AKJC4-017	5-A	Fillet	86ENV289	ND (0.7)	----
AKJC4-018	5-B	Fillet	86ENV290	1.2	0.77
AKJC4-019	5-B	Remainder	86ENV291	2.0/1.8	0.85/0.79
Q.C. Standard Addition (3.5 ppt) Spiked into 86ENV289				3.7	0.70
Q.C. Glassware Tests - Columns				ND (0.2)	----
Flasks				ND (0.2)	----
Funnels				ND (0.3)	----

ND - None Detected (Detection Limit in Parentheses)

/ - Duplicate preparation and analysis